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BENJAMIN FRANKLIN AND HIS SCIENTIFIC FRIENDS*

LEONARD W. LABAREE

SOME years ago a distinguished physicist, the late Robert A. Millikan, undertook to list the fourteen men he regarded as the "most *influential* scientists who have lived since Copernicus was born in 1473." He arranged the names of his selections by centuries, beginning with Copernicus and running down through to the end of the nineteenth century, terminating his list with the name of Willard Gibbs. For the eighteenth century he found two men, and two men only, deserving of inclusion: the French astronomer La Place and the American Benjamin Franklin. Some historians of science would probably wish to substitute one or two other names for those of individuals on Millikan's list, but few if any such students today would seriously question Franklin's inclusion in this select group of the world's most influential scientists.

You will notice that Millikan was talking about the most "influential" scientists, not necessarily those who have made the most spectacular discoveries. He was guided in choosing his candidates, he explained, "by the significance of their contributions as measured by the influence they exerted in the development of the modern world." Franklin belonged in this select company, he was convinced, "because, dilettante though he is sometimes called, mere qualitative interpreter though he actually was, yet it was he who with altogether amazing insight laid the real foundations on which the whole superstructure of electrical theory and interpretation has been erected."

I am not a scientist nor even in any proper sense an historian of science. I have no intention, therefore, of trying to elaborate here upon Franklin's direct contributions to scientific knowledge. What we may consider is one aspect of his scientific influence—not so much the influence his experiments and insights had upon

*Address delivered by Dr. Labaree, Farnam Professor of History at Yale University and Editor of the Benjamin Franklin Papers, at Bucknell University on September 28, 1955, on the occasion of the dedication of the F. W. Olin Science Building.

the future development of science, which was Professor Millikan's particular interest, as the influence Franklin had upon scientific activity in his own day, and, more particularly, the personal relationships he maintained with his fellow scientists. This is a topic which may, perhaps, come more legitimately within the range of competence of a common, garden-variety historian such as myself.

In our own day the world of science, as the world of every other learned discipline, has become highly specialized, highly professionalized, and highly organized to an extent undreamed of in the eighteenth century. If we are to understand Franklin's place in the scientific movements of his time it is well to bear this fact in mind and to take note of the most important differences in the form and organization of scientific activity in the age of Franklin.

In the first place, in those early generations of scientific experimentation and observation, there was relatively little specialization. An eighteenth-century natural philosopher was interested in all the phenomena of nature that came within his ken. He might make his principal contributions in one relatively narrow field or another, but he followed them all, and, the sum total of knowledge being still comparatively small, he could hope at least to understand what his fellow philosophers were saying about their work and he usually felt quite competent to applaud or criticize their conclusions. The great variety of Franklin's contributions was in no sense unusual for his times, and in his correspondence he and those with whom he exchanged letters manifested great interest and understanding in several fields in which they never undertook personally to conduct experiments.

In the second place, science was not professionalized as it has since become. Few if any men in Franklin's day made their careers or earned their living from strictly scientific work. Except for the occupants of a few university chairs, there was for practical purposes no such thing as a professional scientist. Though some few men did devote their major attention to science for a longer or a shorter term of years, nearly all such were in the fortunate position of enjoying independent incomes or of occupying positions, often in the church, which provided a living but left their time largely at their own command. Most of the men who engaged in scientific research, including Franklin, were business or professional men, making their ordinary careers in other pursuits. Some concentrated

on their scientific interest for a few years at a stretch during intervals between their other employments; others were at most spare-time scientists. A later generation has been prone to look down upon these amateurs and semi-pros, calling them "dilettantes." Rather, it seems to me, they deserve especial credit for accomplishing so much under the difficult circumstances in which they worked.

In the last place, the eighteenth-century natural philosophers were, according to modern standards, very inadequately organized. Where there are now dozens of scientific societies, when Franklin began his work there were a few, but comparatively only a very few, societies and academies in existence: as a general statement we may say that there was usually only one such institution in each leading European capital city and an occasional one in some other important intellectual center. Franklin himself became the founder of the first such society in the American colonies. And it should be pointed out that, in keeping with the unspecialized nature of scientific study at the time, virtually all these organizations interested themselves in all branches. There was, unquestionably, one great gain from the fact that they provided a common meeting ground for men of varied scientific interest and so fostered the sound idea that all nature has a central unity and that understanding of certain of its aspects may contribute to an understanding of others. Yet this catholicity of interest acted inevitably to limit the amount of emphasis any one society could give to any one branch of scientific activity, and so limited, as we would see it, the opportunities for interchange of ideas and specialized information.

How then did the natural philosophers of Franklin's time communicate with one another? Wherever it was feasible they did so directly and orally, at the meetings of the societies to which they belonged or in private man-to-man conversations. This method was helpful for those who lived in the same community or were able to visit one another. Franklin, for example, took advantage of his years of residence in London and in Paris to form close personal friendships with many of his fellow scientists in those capitals and to attend meetings of the British Royal Society and the French Academy of Sciences, of both of which he was an elected member.

But direct oral communication, stimulating though it might be,

was obviously an inadequate solution of the problem. At best it left no permanent written record which could be consulted and checked or accurately passed on to other interested individuals, and it made no provision for those who because of distant and scattered residence were able to meet each other directly and personally only at the rarest intervals or not at all. Publication was, of course, necessary, and to meet this need practically all the learned societies undertook to print and distribute their proceedings. The Royal Society (London), incorporated in 1662 but informally organized some years before, began to publish its great series of *Transactions* in 1665, and by the middle of the eighteenth century nearly 500 numbers in 46 volumes had appeared. Other societies and academies followed the same practice. But where we have today literally scores of scientific journals in every major field, these published transactions of the learned societies were among the very few outlets for the printing and distribution of scientific papers in the eighteenth century. Many essentially scientific papers did indeed appear in journals of general circulation, such as the *Gentleman's Magazine* in London. That they did so with considerable frequency is both a tribute to the interest in scientific matters of these periodicals' regular readers and an evidence that the official organs of learned societies did not provide sufficient publishing outlets for the growing body of scientific writing. Book and pamphlet printing helped to fill the gap but could be relatively costly, both to author and to reader, and was, in any case, more suitable for the publication of the cumulative results of prolonged research and study than for the reporting of particular experiments and discoveries as they took place.

There remained one important vehicle of communication among natural philosophers: personal correspondence between them. This was, of course, an early and obvious means of exchanging ideas and findings and it grew and flourished all through the period of Franklin's life. Scientists would learn by one means or another of the work others were doing in which they were likewise interested and either directly or through the good offices of a mutual friend or correspondent would begin to write each other about their work. Such letters might contain information about the writer's own investigations, comment on reports of the recipient's researches or theories, or news of the activities of other scientists

which had come to the writer's attention. Often such a correspondence might continue with regularity for many years without the participants ever meeting each other in person. Many warm friendships thus developed and flourished at long range, surmounting the barriers of national boundaries and differing native languages. When both writers lacked command of a common modern tongue, they resorted quite naturally, and usually quite easily, to Latin. Such correspondence was one of the great stimuli of scientific activity.

The convention of scientific correspondence between two individuals had become so firmly established by the middle of the eighteenth century that it very often became the means of intended communication with a much wider circle than just the individual addressed. Not only would the recipient show the letter around to other interested acquaintances, but frequently he or the writer would send copies to one or more other individuals. Still more important, scientists quite regularly used the letter as the literary form into which they cast the papers they actually intended for printed publication. After such a letter was composed and dispatched either the writer or the recipient might, for example, read it aloud at the meeting of some learned society, and then offer it for publication in that society's transactions or in some other journal. This practice, general though it was, has led a number of modern writers on the history of science to misunderstand the nature of some scientific papers they have encountered, many of Franklin's papers among them. Seeing these documents addressed personally to another man though printed soon afterwards, such modern writers have assumed that they were dealing with private communications which reached cold type only through the unwarranted action of the recipient or an exhibition of immodesty on the part of the writer. The contrary was usually the case. Normally the author would have been quite disappointed if the person addressed had failed to show his letter to other available scientists or, when the subject matter was of real importance, if one or the other of them had failed to find an outlet for its publication.

This lengthy preliminary has seemed necessary as background for the consideration of Benjamin Franklin's relations with his scientific friends and of the correspondence he maintained with many of them. For it was through such friends that he established

and maintained the contacts so useful to a pioneering scientist, kept abreast of what was being discovered elsewhere, and informed the scientific world of his own theories and experiments. During all the years when he was most active in scientific inquiry he was living in provincial Philadelphia where, indeed, he enjoyed close association with a few like-minded fellow colonials, but where he was separated by miles of difficult travel from many other American scholars and by thousands of miles of ocean from all the leading researchers in Great Britain and the European Continent. It was through his correspondence with scientific friends, whether his letters were strictly personal or intended for wider circulation and even for printing, that he exerted his greatest influence on the scientific activities of his time, and it was largely through his correspondence, as I shall emphasize again, that he served as one of the agencies of cultural contact between Europe and the New World and between the scattered centers of population in the American colonies.

Any discussion of Franklin's individual scientific friends ought properly to begin with Peter Collinson. Born in the English lake country of Quaker parents, Collinson grew up to follow his father as a textile merchant and to develop an active trade with the colonies. As an avocation he acquired an interest in botany, was befriended by Sir Hans Sloane, and became in time one of the best known botanists in England. His colonial business brought him in touch with activities in America and he became agent for several Philadelphia institutions, in particular with the Library Company of which Franklin was the principal founder.

Knowing the interest that some members of this group were beginning to take in the new study of electricity in Europe, Collinson sent the Library Company in 1745 a glass tube of the sort European experimenters were using to produce frictional, static electricity for their investigations. This action of Collinson's set off a chain reaction in America. The Philadelphians, and especially Franklin, began to make experiments. The first letter from Franklin to Collinson of which we have any record is dated March 28, 1747. It reveals Franklin's delight in his new activity and the fascinated wonder with which he began the work that was to bring him world-wide and lasting fame as a scientist. He promised, though with some diffidence, to send Collinson a report on the

phenomena he and his friends had observed and then added: "For my own part, I never was before engaged in any study that so totally engrossed my attention and my time as this has lately done; for what with making experiments when I can be alone, and repeating them to my friends and acquaintance, who from the novelty of the thing come continually in crowds to see them I have, during some months past, had little leisure for anything else."

During the next few months Franklin and his friends continued their experiments and he wrote Collinson two long letters explaining their work and announcing some entirely new theories which he felt they had established. Then disaster, or seeming disaster, struck. Further experiments had appeared to disprove the theories he had so confidently and so proudly proclaimed. On August 14, Franklin dashed off a brief letter to Collinson, a letter which displays the humility of a true scientist as well as the agitation of a beginner who fears lest he become the laughing stock of those more experienced in the field. He told what had happened and went on: "I am therefore a little diffident of my Hypothesis, and ashamed that I have expressed myself in so positive a manner. In going on with these Experiments, how many pretty systems do we build, which we soon find ourselves obliged to destroy." Franklin then added a sentence which shows him to have been a more honest man than he was as yet an able scientific prophet: "If there is no other use discover'd of electricity, this, however, is something considerable, that it may *help to make a vain man humble.*" He closed by begging Collinson not to show his former letters around, or if he did, at least to conceal the signature.

All was not lost, however, and continued experimentation convinced Franklin that he had been right in the first place. Further letters on electricity followed. Collinson did indeed show them around and then presented them to the Royal Society. The Society thought too little of them to be willing to print them in the *Transactions,* and Franklin heard that some so-called connoisseurs had even laughed at them. But John Fothergill, a London physician, persuaded Collinson that they ought to be printed. So Collinson offered them to Edward Cave, publisher of the *Gentleman's Magazine,* and Cave decided, in addition to including some of them in his journal, to print them together as a pamphlet or small book. So there appeared in London in 1751, without any direct inter-

vention of the author, a slim volume of 86 pages entitled *Experiments and Observations on Electricity, made at Philadelphia in America, by Mr. Benjamin Franklin, and Communicated in several Letters to Mr. P. Collinson, of London, F. R. S.*

As other letters crossed the ocean Collinson and Cave added supplements in 1753 and 1754, brought out in the latter year a revised and expanded edition in two parts, and in 1760 a third edition in three parts. Not until the fourth edition was being prepared in 1769 and the fifth in 1774, did Franklin have a direct hand in revising the copy for the printer. The first translated edition appeared in France the year after the initial English publication. And two later French versions, as well as Italian and German translations, were published during the author's lifetime. Thus did Peter Collinson a botanist and not a physicist, a man whom Franklin did not personally meet until they had been corresponding for ten years, give to the world the letters on electricity which established Franklin as one of the world's great scientists. It was wholly fitting that when Franklin arrived in England on his first mission as agent for the Pennsylvania assembly in 1757, he and his son who accompanied him spent their first night in London in Peter Collinson's home.

As a postscript I might add that the two men took to each other instantly and became the warmest of personal friends. Their friendship and their correspondence continued until Collinson's death in 1768. About fifty letters between the two survive.

By the time Franklin reached London in 1757 for his first extended stay overseas, his reputation as a natural philosopher was well established. The Royal Society, which had neglected to print his earliest papers, had awarded him the Sir Godfrey Copley gold medal in 1753 and two and a half years later elected him a member. Yet before his personal appearance in London he does not seem to have developed an extended direct correspondence with any British or Continental scientist except Collinson. Occasional letters to or from individuals have survived, but in general the Quaker merchant and botanist served for nearly a decade as the principal intermediary between Franklin and his scientific contemporaries abroad.

All this quickly changed when he arrived in the British capital. Within a short time he had made the acquaintance of the leading

scientists who lived in or near London, either meeting them at the Royal Society or on personal visits, and, as time permitted and opportunity offered, he extended his contacts to those of similar tastes and interests who resided elsewhere in England and Scotland. As had been true with Collinson, many of these men were warmly attracted by his delightful personality and a number of fast friendships grew up, fostered and strengthened over the years by continued contact and by correspondence. With a few he even found time, during interludes of his public activities, to conduct an occasional experiment.

With one interruption of about eighteen months Franklin was overseas continuously from 1757 to 1775 as agent for Pennsylvania and later for several other colonies as well. It would be impossible here even to name all the scientists in Great Britain who became his familiars during these years. Such a list would be practically a catalogue of all the men engaged in any sort of scientific study in the British Isles at the time. We may, however, single out a few individuals for mention.

Among them were two successive presidents of the Royal Society: John (later Sir John) Pringle, a physician; and Sir Joseph Banks, a naturalist and explorer with an independent income. The earliest surviving letter from Franklin to Pringle is an account, written at the physician's request, of experiments the American had made on the therapeutic value of electric shock in the treatment of paralysis. The two men became such firm friends that they made three summer excursions together to the Continent, during the course of which they met personally some of the leading scientists of Hanover, Germany, and of Paris. Among the Frenchmen who showered hospitality on the American tourist was Thomas-François Dalibard, who had arranged the first European experiment, based on Franklin's suggestion, of drawing electricity from a thunder cloud, and had been the translator of the first French edition of Franklin's book. The formal meeting of these two men in Paris in 1767 must have been a memorable occasion for them both.

The letters from Franklin to Sir Joseph Banks of widest general interest today were written from Paris many years later. At the close of the American Revolution two rival groups of Frenchmen began experimenting with balloons. After several preliminary

trials, two ascensions took place at or near Paris in the late autumn of 1783, ten days apart, one balloon lifted by hot air, the other inflated with hydrogen. Each balloon carried two men. These were the first successful free aerial flights in human history. Franklin, now American minister to France, had followed the early experiments with keen interest and was a delighted observer of both flights. He took it upon himself to become reporter of these events to his fellow scientists. He selected Sir Joseph Banks as the direct recipient of his communications. In a series of finely written letters, copies of which he dispatched to correspondents in other cities, he described the aerial vessels of the rival experimenters, narrated in vivid phrases the ascensions he had witnessed, and reported the successful conclusions of these daring and historic experiments. While there exist official accounts of both flights, the Franklin letters to Banks are among the most interesting and valuable records of the first successful stages of man's conquest of the air.

Undoubtedly the man among Franklin's close English friends who stands highest in the annals of science is Joseph Priestley, the dissenting minister whose name is associated in every beginner's textbook with the element oxygen. Although Priestley is usually spoken of as a chemist, his scientific interests, as we should expect, were wide, and when he first met Franklin in 1766 the two men found themselves not only personally most congenial, but both deeply interested in many of the same things, and especially in electricity. It was probably largely through Franklin's encouragement that Priestley overcame his native diffidence and published in 1767 his first important scientific treatise, the *History of Electricity*. Franklin helped by correcting proofs for the book and further supported Priestley's scientific career by acting as one of the sponsors for his election to the Royal Society, on the council of which the American was serving at the time. Although Franklin was the elder by a quarter of a century, their friendship was deep and lasting; their correspondence continued throughout the Revolution, although somewhat sporadically. It was characteristic that when Priestley had a personal problem to solve in 1772—whether or not he should accept a post as librarian to the Earl of Shelburne—it was to Franklin he turned for advice. Franklin's reply has become a classic and, though it can hardly be listed as

part of his strictly scientific correspondence, it is deserving of partial quotation here.

He began by refusing to give Priestley advice on his specific problem but offered to tell his younger friend how he himself went about solving his own problems and how he thought Priestley might do the same. "My way," he wrote, "is to divide half a sheet of paper by a line into two columns; writing over the one *Pro,* and over the other *Con.* Then during three or four days consideration, I put down under the different heads short hints of the different motives, that at different times occur to me, *for* or *against* the measure. When I have thus got them all together in one view, I endeavour to estimate their respective weights; and where I find two, one on each side, that seem equal, I strike them both out. If I find a reason *pro* equal to some *two* reasons *con.* I strike out the three. If I judge some two reasons *con,* equal to some three reasons *pro,* I strike out the five; and thus proceeding I find at length where the ballance lies; and if after a day or two of farther consideration, nothing new that is of importance occurs on either side, I come to a determination accordingly. And, tho' the weight of reasons cannot be taken with the precision of algebraic quantities, yet, when each is thus considered, separately and comparatively, and the whole lies before me, I think I can judge better, and am less liable to make a rash step; and in fact I have found great advantage from this kind of equation, in what may be called *Moral* or *Prudential Algebra.*"

Coming from one highly rational man to another, this letter may have been quite effective. At any rate, the *pros* seem to have outbalanced the *cons* in Priestley's equation, for he accepted the offer of the Earl of Shelburne and served as his librarian for about eight years.

The last of Franklin's London scientific friends I can mention here was not an Englishman at all but a Dutch physician, Jan Ingenhousz. Born in Breda and educated in the Netherlands, Ingenhousz came to England to practice medicine about 1764. Interested in scientific matters of many sorts, he became acquainted with Franklin and the friendship which developed survived years of separation and extreme divergence of personal activity. Because of his successful application of new and modified forms of smallpox inoculation, Sir John Pringle sent him to Vienna in 1768 at the

request of the court of Austria to inoculate several members of the imperial family. The next year he was made body physician to the emperor and empress. In this capacity he had considerable time for scientific study and experimentation, wrote many papers on varied topics for the Royal Society in London, and conducted correspondence with leading scientists in various countries. His work covered many fields, but perhaps he can most justly be described as the man who took some of the first steps on the long, long trail leading to an understanding of the process of photosynthesis through which plants, by using the energy of sunlight, convert certain inorganic compounds into organic matter.

Franklin and Ingenhousz met only a few times after the doctor's departure for Vienna but the surviving correspondence between the two is heavier than that between Franklin and any other European scientist, British or Continental. They wrote each other on all sorts of subjects, scientific, political, and personal. During the years of Franklin's residence in France as representative of the newly created United States, Ingenhousz wrote him fully and often. He knew that the American's official duties were too heavy to leave much time for scientific reading, to say nothing of experimentation, so he took it upon himself to keep his old friend posted on the latest activities and theories of the natural philosophers of several countries. This was a service that Franklin could appreciate and his replies show how much he wished he could be relieved of his diplomatic responsibilities and devote his few remaining years to his old love, scientific investigation.

At the end of the war Franklin sent Ingenhousz copies of his letters to Banks about the balloon experiments and engaged in a little speculation on the effect of the invention of human flight upon the future of mankind. When the first ascensions took place, everyone in Paris marvelled but soon the skeptics began to ask of what possible good was the new discovery. "What good," retorted Franklin, in a reply that went the rounds of Paris conversation, "is a newborn baby?" In a letter to Ingenhousz he offered one suggestion regarding the future of this incredible infant, a suggestion in which he proved, unhappily, a better prophet of how air power might be used in war than of how it might contribute to universal peace.

"It appears as you observe," he wrote in January 1784, "to be a discovery of great importance, and what may possibly give a new

turn to human affairs. Convincing sovereigns of the folly of wars may perhaps be one effect of it; since it will be impracticable for the most potent of them to guard his dominions. Five thousand balloons, capable of raising two men each, could not cost more than five ships of the line; and where is the prince who can afford so to cover his country with troops for its defence, as that ten thousand men descending from the Clouds might not in many places do an infinite deal of mischief, before a force could be brought together to repel them?"

We might well add to Franklin's other claims to distinction that of being godfather to the paratroopers of World War II.

Franklin's scientific contacts on the European Continent extended from Peter Kalm of Sweden to Giovanni Battista Beccaria of Turin, Italy. He was elected to membership in the learned societies of Rotterdam, Göttingen, Padua, Turin, and Paris. His most important connections were in France. His stay of more than eight years in that country during and following the Revolution enabled him to renew the personal contacts with French scientists he had made on his earlier visits with Pringle and to get to know many others with whom he had perhaps exchanged occasional letters or whom he had known only by reputation. I shall not attempt here to discuss the individual French scientists who became his friends, but rather to comment briefly on his relations with them as a group.

Franklin's position in French scientific circles during these years, 1777-1785, was somewhat different from that he had earlier experienced in Great Britain. When he first reached London he was regarded by English scientists as a fellow subject of the Crown, a provincial of course, but still essentially one of their own. Men of standing in science were happy to treat him as an equal, and while some deferred to his knowledge and his accomplishments, he won his personal place among them and built his friendships essentially on the basis of his own merits as an individual. During his early years in England, especially, he was to his English scientific friends a charming man, worth knowing for his own sake as well as for his scientific achievements, and not in any sense as a symbol. As the controversy between Great Britain and the colonies increased in severity and Franklin more and more became recognized as the chief spokesman in the mother country for the colonial point of view, his name did begin to acquire a certain symbolic significance,

but by that time he had formed most of his British friendships and his position in scientific circles was hardly affected by his increased political importance.

When Franklin arrived in France late in 1776 he came as a foreigner, the official representative of the struggling little republic only six months along the road to independence. He was a symbol, a symbol of that new and courageous people, still so close to the savage wilderness, who had dared to defy the might of Britain, France's ancient enemy. He was an exotic, delightful and appealing, but still an exotic, who went among the Parisians wearing on his wigless head his fur cap and his spectacles—which later through one of his own most useful inventions became bifocals—chatting with men of all social positions in his self-taught French and flirting charmingly with their womenfolk. But more than a symbol and an exotic personality, he was a grand old man, one of the few authentic grand old men in Paris during those years, as was demonstrated on the occasion of a dramatically staged confrontation between Franklin and Voltaire at the Academy of Sciences, when at the insistent cries of the assembled members and invited guests the two formally embraced *à la française*. After the signing of the Franco-American alliance in 1778, Turgot created for Franklin one of the most famous of modern Latin epigrams: *Eripuit caelo fulmen sceptrumque tyrannis*.—"He snatched the lightning from the sky and the sceptre from tyrants." Franklin's position in France was indeed very different from what it had been in Great Britain.

In these circumstances few French scientists felt free to regard Franklin as their equal. In reputation, scientific as well as personal, he towered above them. If he sought them out and offered his friendship it was they who were honored and not he, however modest his approach. On his side he was never allowed to forget that he was something more than the individual scientist, turned diplomatic envoy for the time being. He was in fact an American cultural ambassador to France as well, and through France to all of Europe. No American before his time and few if any since have represented abroad so ably and with such distinction the intellectual summits of American society. Few have won such respect both for themselves and for their nation among the cultural elite of the Old World.

The friendships among Continental scientists he formed during his years in France were the friendships of an old man—he became seventy-one a few weeks after first reaching Paris and sailed for home in his eightieth year—and of an outstanding figure on the stage of world politics and diplomacy. These friendships were rewarding to Franklin personally and most helpful to the cause he represented, but with rare exceptions they could hardly be erected on the same basis of equality that had underlain the scientific friendships he had formed in England.

I have reserved for final consideration Franklin's friendships with his fellow scientists in the American colonies. Here again it is impossible to single out for detailed comment the individuals who became his scientific cronies and correspondents. It is safe to say that from the early 1740's onward he knew either personally or by correspondence nearly every American, wherever situated among the colonies, with any claims to significance in scientific studies or achievement. And because his work as deputy postmaster general in North America as well as his other public activities caused him to move about much more than most colonials of his time, he found opportunities to meet personally far more of these congenial spirits than might otherwise have seemed possible in those days of difficult travel and provincial isolationism.

Quite naturally, many of his closest scientific friends were residents of Philadelphia or of nearby communities. Several of them were members of the Junto he had founded as far back as 1727 when he was only twenty-one, Thomas Godfrey, a mathematician, and William Parsons, a geographer, among them. Other friends of greater fame included John Bartram, the botanist; Ebenezer Kinnersley, Franklin's partner in his early electrical experiments; James Logan, a "universal philosopher and supporter of botanical studies"; and the medical scientists Thomas Bond and Benjamin Rush. In other colonies Franklin developed close friendships and maintained extensive correspondence with such men as Jared Eliot of Killingworth, Connecticut, a Puritan divine and advocate of scientific agriculture; Cadwallader Colden, New York politician, historian of the Iroquois, botanist and mathematician; John Mitchell of Virginia, another botanist and a map-maker; and John Winthrop, professor of mathematics and natural philosophy at Harvard, astronomer, physicist, and mathematician, who may per-

haps be called the first truly professional scientist in America. There were many others.

With such men Franklin forgathered whenever he could and in the intervals between their meetings carried on an extensive correspondence. He acted as intermediate correspondent among several of them who did not personally know each other, passing along their scientific letters to him and returning to the writers the comments and suggestions of various readers. To the extent that any one man could serve as a focal center for the scientific interests of his scattered fellow-colonists, Franklin served as that center.

It was not long, however, before Franklin realized that such informal and unorganized contacts were quite inadequate to serve the need for intercommunication among science-minded colonials. Organization was needed. In 1743 therefore he drew up and distributed a "Proposal" for the founding in Philadelphia of a society of "Virtuosi or Ingenious Men residing in the several Colonies to be called The American Philosophical Society who are to maintain a constant Correspondence." He offered himself to assume the duties of secretary of the group, as he put it "'till they shall be provided with one more capable." It was clear that he intended to model the new organization on the Royal Society of London and that he hoped it would fulfill a similar function among the natural philosophers of the colonies.

This is not the place to recount in detail the early history of this, the oldest of American learned societies. It is enough to say that for a variety of reasons the society languished during its early years, that it was revived in 1768, merged with another younger group in Philadelphia, and effectively reorganized in January 1769. Although Franklin was absent in England at the time, he was then elected president and was annually reelected until his death in 1790. Increasingly the reorganized society fulfilled the functions Franklin had conceived for it at the start. It sponsored cooperative scientific undertakings such as astronomical observations, received and read papers on various scientific subjects, and completed in 1771 the publication of the first volume of its *Transactions*. Copies of this volume, together with those which followed, were sent abroad to the principal foreign academies and arrangements were begun for the exchange with them of scholarly publications. Thus the society was able to become in considerable

degree a clearing house for scientific information both within America and with groups overseas. Franklin's personal circle of scientific friends thus was vastly, if indirectly, enlarged to bring into touch with one another the leading participants and promoters of scientific research in the New World and the Old.

In conclusion, let us return to the point with which we began. Professor Millikan included Franklin among the fourteen most *influential* scientists since the fifteenth century. The distinguished physicist was primarily interested in Franklin's influence upon the modern world. Here we have been rather more interested in his influence upon the scientific activity of his own day. As I have tried to suggest, Franklin achieved an astonishingly broad acquaintance with the other scientists of his time, corresponding at one time or another with a great number of them, and forming close personal and intellectual friendships with many individuals among them. When he went to England in 1757 and to France twenty years later, he was recognized in each country as the outstanding natural philosopher of the New World. Through his own work and the attention which it won he enhanced the reputation of American science generally. No one in the Old World could legitimately adopt quite such a condescending attitude toward the cultural development of America as he might otherwise have done, since it had produced a man of Franklin's scientific stature. When during his years of European residence this prior reputation was transformed into direct and personal acquaintance and for many British and Continental scientists into close and treasured friendship, the cultural bonds between the Old World and the New were renewed and strengthened. Through his friendships with men of science Franklin served as one of the chief agencies of cultural contact across the Atlantic Ocean.

In somewhat similar fashion Franklin served as an agency of cultural unification within the American colonies. When he was born in 1706, the colonies consisted of a fringe of scattered settlements along the coast. Organized into a dozen separate governments, they were united only by their common language and common political dependence on the mother country. They were divided not merely by distance from each other but by ignorance, suspicion, and mutual jealousy. Communication was difficult and slow, and men with common interests had little opportunity to

exchange ideas and information with each other. If America was ever to become unified, not only politically but culturally and socially as well, it would have to be through the development of contacts and communication among the leaders of political and cultural activity. More than any other one man of his time Franklin succeeded in breaking down these barriers of distance and lack of communication. He did it in various ways, not the least of which was through his zeal in developing contacts, personal and literary, with other men interested in science wherever they might be located. He acquired scientific friends in virtually every colony and, with varying degrees of frequency and intensity, he maintained communication with them. His first proposal for an *American* Philosophical Society was, as the event proved, a little premature, but it was better to lay plans too early than too late, and in the end his proposal took effective and enduring form in a learned society of great usefulness.

Franklin's contributions to science are not to be measured, in the long perspective of history, only in terms of his own experiments and observations, but also in those of the influence he had, through his wide circle of friends on both sides of the Atlantic, upon the scientific progress of his times in general and upon the cultural ties linking nation to nation and man to his fellow man.

THREE ENTITIES AND ROBERT FROST

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THE body of work produced by any poet can be regarded as a dialogue. No poet is talking to himself in the unflattering sense of the phrase. He is talking to impress—to impress other persons with his sense of the world, of nature, of man, or (it may even be) of himself. But the dialogue which certain poets are involved in is a direct, naïve kind of communication between poet and reader. Thus, Pope's *Essay on Man* is a direct address to readers of some cultivation; and many a romantic poet ventilated his emotions just as directly as did Pope his ideas. The poetry of Robert Frost, however direct in language and strategy, does not aim at this sort of direct communication. Frost does not engage his reader in a direct dialogue. Rather does he "mount" a dialogue which the reader may, if he chooses, observe.

Frost's great succession of poems stages not a conversation between Frost and us, his fellow human beings, but between Frost and a very different entity. We readers may, if we care to, take the profit of this conversation; but it is a conversation that is not primarily for *us*. It is for Frost himself.

With what entity does Frost converse? The answer is this. Frost, in large part, converses with nature; he has arranged, buttressed, and protected his labor to advance this conversation and no other. And Frost's conversation with nature is much nearer a true dialogue than that often effected by the poet who thinks of himself as conversing chiefly with his readers. (Pope's conversation is, for example, so far as the reader goes, all take and no give.) Between Frost and nature there is, we shall show, a real exchange. What though the dialogue often seems, to our ears, diffuse, repetitive, and unimpassioned? What though it has for its overtones the creak of porch rockers? The stakes are high even if the method is quiet. What Frost has cast down is a gauge that, in his eyes at least, is very great: his mortal soul.

More directly, one may say that Frost has—or had—every hope

that from the dialogue which he stages in his books would come, to him and incidentally to his readers, certain sharpened perceptions about what it is to be a person, a human being. A Frost-like image puts before us the poet in a November (or April or June) landscape; his feet are firmly placed on the ground, and he listens and looks and speaks without wavering. And nature (this is much to its credit when faced by so resolute an interlocutor, an interlocutor who "wants to know," who will not be hoodwinked) answers with the same plainness and lack of subterfuge—giving a clear answer when a clear answer is possible and politely signaling those ambiguities which cannot be reduced to clear simplicity, at least by the honest, aboveboard entity that New Hampshire nature is. Thus, the poet and nature talking are equals meeting—equals even though it is the poet, the human being, who can put questions, and nature that can give the answers. They are equals because they have gifts that, in any case, require the presence of the other party to the conversation for fruition. Nature has its ways. (I resist the temptation to write "*her* ways," for nature in Frost never glides toward an easy personification.) But those ways can reach a fulfillment in man's comprehension, and nowhere else. Man has the power to state a problem, to draw up alternatives. But it is only nature (says Frost in all but the late stages of his poetry-as-dialogue-set-down) that can lift a finger and point to the alternative that is correct.

II.

Nature, we recall, is not always so addressed and treated by poets who consciously (as Frost) or unconsciously "mount" a dialogue with it. Nature has been a goddess, a demon, a daimon (a nice distinction, that), an enigma. Nature is a tender though somewhat stammering mother, a potential womb and refuge. Nature is a ravening force for which fire and sword are apt metaphor. Nature is a variety of things to a variety of poets, but (at least this usually holds) one thing to one poet. In Frost's poetry, nature is a variety of things to one poet.

Moreover, in Frost, this multiple-answering nature is not any very august entity, either protecting or devastating. Nor are the moments frequent when nature is that something "far more deeply interfused" of which Wordsworth spoke. That would be to allow

too high a density to nature; or if not too high, at least a density that would make nature incapable of the easy talk that Frost has with it. Nature must be kept—if it is to be addressed, if it is to give answers useful to man—on a medium level. It must be thought of as neither deity nor absolutely first principle. It need not be a person. (Indeed, in Frost it is distinctly not a person, and grosser animistic overtones are eschewed.) It is better to say that Frost's nature is a process that can be interrogated, that can give—in its own mode—most interesting replies. It is concrete process, not just process as an omnibus phrase which allows us to handle (and dismiss) the multiplicity of season and animal by which we, if we are like Frost and live in the country, are surrounded. We converse (or should seek to converse) with the process which we know quite directly when we see how Hyla Brook is a "diminished thing" of mud crust in August; we should keep up our talk with the process which informs us, when snow falls, that snow will also depart. We enter a swamp to seek orchids, we go as far as we dare in the evening up a slope and stand mute while two deer pass us beyond the last boundary fence; this too is process.

Since the process called nature is thus kept concrete, the answers it delivers are concrete also and—at least in this concreteness—well-suited to the intelligence of the creature (man) who has the power to put partial queries and assess partial responses. (Much of his career, Frost was convinced that man is reduced to silence or confusion by omnibus answers.) There is, in Frost, no *one* "impulse from a vernal wood." One impulse would always, at all times and under all circumstances, say the same thing. In Frost, there are several impulses, and they come from woods that are as often bare as vernal. Nor do these impulses always say the same thing (for example, that only man is vile). There is a succession of impulses that go to make up process (and Frost would prefer less weighted words like *events* or *facts*) and this succession is not monotonous. It is shifting and various and consequently can support a real dialogue. When there is one question and one answer, there is hardly basis for a real dialogue.

There is a religious analogy that will serve to point this up. If "only God is holy," then—as with some modern Christian existentialists—all that man can learn from *any* contact with deity is

man's baseness, his incapacity to create anything good. In this connection, a polytheist is in better case. He is surrounded by the works, the incitations and instructions, not of one deity but of many. There are real reasons why a polytheist should pay attention to the instruction of the gods, since it is not always the *same* instruction (as, in this connection, is the instruction that emanates from an entirely transcendent deity). One cause of spiritual "dryness" may well be a depressing sense that the one deity is always saying the same thing: such deity's words always witness *against* what man is trying to do. So attention may lapse into indifference, either because the message is always the same message or because this message is so overwhelming an answer to a human question that man is left unable to stir. Such monotheistically animated revelation can hardly be spoken of as a dialogue; man's role is to be attentive and, often, nonplussed. There was, in contrast, a real dialogue during what are called "earlier" stages of religion when man did indeed talk and argue with deity (or deities); when the medicine man or shaman wheedled, cajoled, and threatened the fairly august presence his magic summoned, when Moses not only listened to the God on Sinai but threatened to abandon that god if deity were resolute in carrying out his threat to wipe out the people who had been worshipping the golden calf.

These latter relations are not the same, I grant, as Frost's dialogue with nature or process. But they give us a more exact idea of the conditions under which Frost's dialogue advances. "Man needs not nature more than nature man." What has power to instruct—the multiple and shifting reality of natural process—has a variety of lessons to offer. Yet not fact or event in the process can become a lesson unless man turns his ear to the wail of a December wind or sharpens his view of the winter sky. In "New Hampshire" Frost calls himself a "sensibilist" and an "environmentalist" (206),[1] but he does not mean what these terms in other contexts convey: that man is putty to the impress that comes from the world eternal to him. What Frost constantly displays is his conviction that man must be an environmentalist because if he were not—if he walked the city streets or worked at a machine—he would be out of touch with the only sort of environment that

[1] All page references are to the *Complete Poems of Robert Frost* (New York, 1949).

can instruct. He would be immersed instead in a senseless and artificial *human* environment that offers the wise "sensibilist" no materials that speak to him, that exercise his powers.

Frost has full right to call himself anything he likes; and we have just as full a right to seek a more apt and, indeed, a fairer naming as we try to define the conditions of the prolonged dialogue that carried Frost through several decades of poetic effort. For Frost is a far cry from the usual twentieth-century "environmentalist" who will argue that what is outside a man entirely determines what is within a man. It is better to call Frost a latter-day animist—but an animist who has escaped the weight of the graver burdens that old-time animists had to carry.

Animists, we recall, were the most thorough-going of polytheists. To them spoke every stock and stone, every ford, every high hill. An ancient animist—as does Frost—constantly interrogated his surroundings and watched for signs. But Frost does not pay the price of fear and distress and frustrated ignorance that the early animists had to pay as they asked nature for instruction. Frost approaches the same agents of instruction—the tree in blossom, the mountain unknown to human foot—but he wears the sure cuirass of rationalism; at least enough rationalism to rob the sustained dialogue of any element of fear and apprehension. Process is made up of events that happen, it is true. But process does not display any evidence of a will directed against us or working for us, either. We must recognize that we are inextricably involved in these events (or, alternately, we should, for the sake of our best health, strive to be inextricably involved in these events). Without positing will or personality in stock and stone, in the come-and-go of seasons, we must be just as attentive to them as was the shaman when he interrogated the wind.

It is not that portents have become impotent. (If that were so, there would be no point to Frost's dialogue with New England nature.) But it is a potency that has lost much of its animus—and its humanity, for that matter. It continues to work, but man is not to feel that it is working against *him*. Jacob wrestled with the spirit of the ford Jabbok, and he knew that the spirit of the ford opposed the passage of the tribe of Jacob and must be worsted. Farmer Brown, in "Brown's Descent," is also put to a loss by nature; he slides two miles down an icy hill before he can

find his footing again. But the New Englander does not suppose that there is an evil spirit in the icy slope that keeps snatching at his heels. And Brown displays his equanimity by picking up his lantern and walking home the long way. He will (we suppose) remember about icy slopes in future winters; he will not, however, take the further step and suppose that the icy slopes and the April thaws and the harvests with which he is closely involved are in themselves either for or against him. And he has a good existence because his farm life keeps open a clear channel between him and his natural environment. He can keep on asking his questions, and nature or process can give its replies. Or, better, give the *effect* of replying. Frost, if not his unreflective neighbor Farmer Brown, takes the many impacts of process as replies without seriously arguing that what he takes as replies have behind them any shadow of intention, of personal will or intelligence on the part of the process that supports the replies that have come.

The scientist, we are told, puts questions to nature too. Process is questioned, but the investigator does not imagine that the answer he gets is anything but the contact between what process is and the detached comprehension of the investigator. At first glance, Frost seems to be very close to the scientist; yet he does not part company with the ancient polytheists. To them, the multifarious process which they peered at was one that mattered tremendously for them as individuals, for the tribe to which they belonged. They were deeply curious, but they had no understanding of the guiding emotion of the scientific investigator—dispassionate curiosity. Their attention was fixed on the topics of life and death, good and evil. And so is Frost's. His enlightenment—or the enlightenment of his culture—has driven the demons from the groves and the thunder god from the hill. But—and here Frost has less in common with the common-denominator enlightenment of his own day and shares much with the expectations of the benighted animists—the New England poet does not suppose that nature, sheer process though it be, has lost its power to be the vehicle of moral instruction. Nature answers not just in wave-lengths; it speaks about good and evil and "teaches" man on topics that are not matters of exact knowledge.

Persons impatient with the persistence of any such view of process have some reason to be impatient with Frost, however

purged his dialogue may be of the crudest animistic overtones. The "game" the animist played seems transparent to our eyes. He projected into tree or bush his moral aspirations, and tree and bush merely gave mysterious sanction to those aspirations. Frost's "game" is essentially the same "game," although it is less transparently so. Frost does not force process into a corner where it has to speak with the clear (and indefensible) accent of revelation, and the questions Frost puts to continuing process and draws from it are modest and piecemeal. The tree tossing in the storm is not required to give more than a clue to the storm that moves through a human breast. The unexplored mountain does not have to stand for more than a token of the limits which process imposes on social order. Indeed, through the channel which Frost wishes to keep open between himself and the seasons and growth flows revelation without tears.

III.

All this is not to say that Frost's sort of unweeping revelation does not have its price too. The cost that natural process exacts —if it is to be regarded in Frost-fashion as a real vehicle of revelation—is, indeed, considerable. It demands the exertion of physical energy needful to raise crops and harvest them; it demands the endurance of a high degree of solitude on an outlying farm. To survive in the midst of nature and to be able to listen to process involves one in an existence that men physically weak and men empty of mental resource would flee. Solitude is endurable (one knows from his own experience or can guess from what Frost sets down) to the man who has made his being suitable to it. He must have emptied out of that being many inclinations that other minds—Montaigne's, Johnson's—have been bold enough to term both "natural" and ineradicable in man. (Montaigne's "nature" is a norm that emerges not from a consideration of inanimate nature but from a study of a number of human societies. And did not Dr. Johnson say that the high tide of human felicity was to be found at Charing Cross? To Johnson, the lowest tide would be found ebbing in the farthest Hebrides or, even, in rural New Hampshire.) The man who keeps alive an abiding suspicion that there is another dialogue in which he ought to be involved is not the man who can sustain the dialogue that, in much

of Frost, seems the whole duty of man. The channel of the nature-man dialogue is disturbed, another frequency intrudes, and a person begins to suspect that he ought also to be taking part in a man-society dialogue.

A complicating element in the description which we try to make of Frost's characteristic dialogue is that fact that Frost does introduce pictures of the relation of men to men. But all the men—and the women—who do come into fairly intimate relation with each other are persons who sustain the more important nature-man dialogue. They are not aware of each other simply as human beings; they know each other as creatures who have, as their first duty, the wresting of a livelihood from nature, a process which imposes on their own characters strict limits of taste and curiosity. These persons must see man as a being that has a place in process rather that what a good deal of man's experience suggests: a being that gets his place, that achieves the effects proper to him, in despite of process. This, at least, is what a good deal of experience in complex social life suggests. It is not a suggestion that cancels the importance of the nature-man dialogue; but it qualifies it. It would seem that Frost gravitated to the locale and to the sorts of persons that would display least the power of man's experience of life in society to temper man's experience of life in the midst of natural process. Man who must live in terms of harvest, of preparation for winter, of expectation of spring, has scant cause to explore other terms that might make him a different sort of "sensibilist" or "environmentalist." He has little cause to suspect that the human codes by which his rural life is governed may be an extension of forces that do not find a ready place in process; he has little reason to suspect that what arches over man is mankind as well as nature.

True dialogue, we have intimated, is characterized by give-and-take, by diversity and uncertainty of opinion. All this is a fair description of what Frost has set down. Process gives Frost not one but several answers; nor are these answers entirely consistent with each other. To schematize, these are some of the replies which the New England shaman without fear—and "without reproach" too—has drawn out from his determinedly unambitious dialogue with the seasons and weathers. All the answers express the insight that man is indeed apart from nature, though he at-

tains his greatest health in not maximizing that separation as do, in various ways, a factory-worker, a litterateur, or a political do-gooder. (These examples are Frost's own.)

Frost's assumption is that man must minimize his apartness. But there is also a point beyond which man must not go *toward* nature. For one is not permitted to say that man is "the same as" nature. Man "the same as nature" is man "environmentalized" in a way utterly repugnant to Frost, "environmentalist" though he be. For Frost is eager to stage his dialogue in such a way that he can investigate the paradox which, so far as we know, man alone can hold before himself. The paradox is this: man must admit that he belongs to process; but he is the only element in that process that knows what is involved in belonging to process.

It is this cultivated awareness that is productive of the several insights that we now note. We do not mean that Frost would list them as we do. Tabulating is one thing, and listening is another; and Frost (we must judge) would rate attention to systematic arrangement far below that direct attention which garners what multiform process presents. But we are being attentive to Frost, and something like these are the turns taken by the dialogue that we listen to.

Process teaches man what he is by offering, in the fair face of the natural world, confirmation of what man is. It also teaches when it offers, in the less fair face of nature, what man is not. Both confirmation and negation that come from contact with process define man; they suggest what human activity comes to. Supposedly, life under the conditions of urban life could not thus define man. That life offers man a face neither fair nor foul; it offers him a face of utter confusion. Nor can the body of inherited human knowledge have this definatory function. Natural process has a past, and humanity has a past. But the past that we attribute to natural process is almost static or (a near thing) quite cyclic. If process is thought of as evolving, the evolution is so minimal that what bulks large in our awareness is the repetition and not that which moves toward some telefinalistic goal. The "purpose" of nature, so far as we are aware of a purpose, is to repeat itself, not to recreate itself—to be a wheel turning rather than an arrow flashing toward an unimaginable target. Perhaps the comparative uselessness of human tradition as a source of definition for

man is that it displays none of the wheel-effect of nature. Tradition —the deposit we call history, the deposit we call literature—is not cyclic or fixed or even predictably evolutionary; and whenever we make an attempt to read the human past in order to discover the "permanently human" or the recurrent alternations of the permanently human or—over vast stretches of time—a regular approach toward the goal of being human, we are suddenly aware that we are reading our hopes and not the record. We find (at least this is what we find when we are in some sympathy with Frost) that "tradition," like the modern city, offers us a face that is neither fair nor foul. In some moods, we may be forced to judge that "tradition" offers us a face that is hopelessly ambiguous and thus non-definatory of the humanity which we seek to find in ourselves and to fix before us, in some external form, for contemplation and discussion. Process, Frost is sure, offers us "the better way."

IV.

Frost's habit of composition is to fix his attention on a natural object and then, with a suspense which his readers share fully, to wait until some sort of meaning comes forth or is teased forth by the particular union *this time* of the human viewer and the natural fact. From such procedures we would not expect system; we certainly do not wish, in this essay, to create a system. What we now bring before us, with the purpose of showing what a clear channel between nature and man produces, are the various products of "this time." What the products share is a similar point of departure and a flowering in a meaning that is more than a wave-length reading, that is humanly relevant, that is ethical if not political. It is as if Frost says with Whitman: "I contradict myself? Very well, I contradict myself." The contradictions we now sample are bound together by their common source in some "moment" of process and by the mind of the recipient (Frost's mind) where they have found a common resting-place. They rest together compatibly; a mixed bouquet of flowers is not unlovely —it has come from one garden and now occupies one vase.

What does nature confirm in man? Here are samples. "A Line-storm Song" offers us storm and rain as symbols of a very

human issue: revival of love. A nature-detail becomes a means of defining a human experience. The time of storm

> . . . seems like the time when after doubt
> Our love came back amain.
> Oh, come forth into the storm and rout
> And be my love in the rain. (39)

The constancy that is the greatest mark of human love finds its model in nature also.

> The heart can think of no devotion
> Greater than being shore to the ocean-
> Holding the curve of one position
> Counting an endless repetition. (308)

Whether human constancy takes its cue from the shore or is able to recognize itself and intensify itself by sight of the fixed shore is a question for epistemologists if they would deign to handle it. Frost is no epistemologist; his poems persist in saying with simplicity, "This is how it happens." We too, as we press forward in our sampling of the "lessons" of Frost's poetry, must try to imitate this casualness without—the obvious danger—becoming lost in a morass of detail. Such a listing does not misrepresent the texture of Frost's thinking. For we sample a proverbial wisdom, although it is restricted within the limits we have noted. And we must never forget that it is the wisdom of a man who is sufficiently sophisticated to produce a different sort of wisdom if he thought it had any worth.

Revolt against convention has the sanction of process. Folk-wit ("Good fences make good neighbors") is rejected because of what nature-wit suggests. ("Something there is that doesn't love a wall.") (47) It is better to ally oneself with that which, in freeze and thaw, rejects boundaries than with that which—in parrot-like appeal to a sort of tradition—keeps applying restrictions for generations. But to "live with" nature (in Frost) is not to find confirmation for sweeping rejections of codes (as did Childe Harold in the Alps); it is to discover much more precisely than we will ever discover in the city, the conditions of living at all. It is to abandon grandiose gestures; it is to learn "what to make of a

diminished thing." (150) It is to see, even in one's expansive moments, that it is better to be a swinger of birches than to take flights into the intense inane—to go *toward* heaven (toward complete comprehension, I suppose) with the explicitly held prospect of returning. From nature, from our patient contact with process —a contact slow, if anything, rather than swift—we can be confirmed in a taste for a wider experience. But this confirmation comes soberly. We must not wish, as Frost puts it, to "cleave the interstellar gloom." (151) We must turn a deaf ear to any deity who gives so inclusive an answer that our dialogue with him is terminated. Rather do we learn from touching rough bark and tasting bitter clove that the best human life is that in which a wide range of sensation gives us enough sensations for comparison —comparison sober and canny, that is.

When we are not able to be sober and canny, when passion or grief overtakes us, what then? Here too confirmation often comes if the dialogue with process is resolutely sustained. In a set of verses almost Freudian, Frost understands the passions of the blood by analogy with the tricks water plays on those who would dam it up.

> Blood has been harder to dam back than water.
> Just when we think we have it impounded safe
> Behind new barrier walls (and let it chafe!)
> It breaks away in some new kind of slaughter. (323)

That is, one may come to understand the violence in oneself not by discovering it in some old war-chant but by watching the waters at an improvised floodgate. Nor does one need to go to astrophysicists for analogies to the depths, the emptinesses and fallings-away in oneself, that are quite as terrifying as the violences of the blood. Nature not in the sky but nature near at hand depositing level after level of snow—all this clarifies the desolation that man carries in his own bosom.

> They cannot scare me with their empty spaces
> Between stars—on stars where no human race is.
> I have it in me so much nearer home
> To scare myself with my own desert places. (386)

It is the "snow falling and nigh falling fast" that defines man's own "desert places."

Were this all there is to make out in the nature-man dialogue, this were an easy gospel rather than the unending conversation we must see it to be. But as he watches nature, man learns what he is not just as certainly as he learns what he is. Process is not a superintending brother, guiding our steps. Process is an impersonal entity that is (as happens) our proper ambient. And it is up to us, by pertinacious chat, to find out when we are at home there and when, almost as often, we are not. Process follows its course, and we need not even say what that course is. We need only say, "Here and here it is my course; here and here it is not my course at all." This latter denial does not make us less dependent on the dialogue than we are when man and nature follow parallel paths. When the cruel Pacific batters the sea-cliffs, that is a moment just as valuable to our sight as the fixed and gentler shore of the Atlantic that served to confirm our wish for constancy and order. It is well to know of the "night of dark intent" (314); it is well to know that there are times when, as human beings, we resist nature rather than fall in with it—times when we must move our huts up the shore or, at the worst, abandon them. Man is discontinuous with nature as well as continuous. Farmer Brown, we noted, "bowed with grace to natural law" (175)—and this grace comes from knowing that which is indifferent to us in process as well as that which favors us or seems to mirror us. We slide if we must; we must avoid sliding if we can. Frost looks at an abandoned pile of maple logs; they are of great use to man, but they now exist in nature only as an obstruction to the springing plants. In process it exists only

> To warm the frozen swamp as best it could
> With the slow smokeless burning of decay. (127)

Even when we look at the long-scale view of evolution, when we say that nature is an arrow as well as a wheel, we are not to despair. Out of limits that exist—that are set up—in no relation to us, we discover the conditions of human activity. Soil may be washed away from our fields by a cloudburst; but, taking a fanciful long view, we can look forward to a new earth-tilt—a tilt

whose particular moment of occurrence cannot be foreseen but whose coming is certain. And we can use that tilt for our purposes.

> Then all I need do is run
> To the other end of the slope,
> And on tracts laid new to the sun,
> Begin all over to hope. (369)

Definatory contrast as well as definatory affirmation can give us strength.

> May my application so close
> To so endless a repetition
> Not make me tired and morose
> And resentful of man's condition. (369)

Nor do these contrasts between man and nature simply tell us where to fear, where to be cautious. They test, they challenge. They are occasions for a very full exertion of our powers; powers we would not discover did we live always in October, with fruit ready to fall into our lifted hands. The tree across the road

> . . . likes to halt us in our runner tracks,
> And make us get down in a foot of snow
> Debating what to do without an axe. (296)

And a father must say to his children, frightened by the waste of fire in process and the waste of war in human life:

> The best way is to come up hill with me
> And have our fire and laugh and be afraid. (166)

But fear and testing do not exhaust these negative functions of process. A definite event in nature may suggest—as strongly as may be—an opposite *human* course of action. A girl finally learns to let go of the birch limb that takes her off the ground; but the same adventure informs her that she must in certain relations never let go.

> I had not learned to let go with the hands,
> As still I have not learned to with the heart,
> And have no wish to with the heart—nor need,
> That I can see. (243)

Nature may be indifferent or may, as with the girl, instruct by careless contrast. But—to summarize the effect of all this negative counsel—one may say, with Frost's Henry Hudson :

> 'Better defeat almost,
> If seen clear,
> Than life's victories of doubt
> That need endless talk talk
> To make them out.' (257)

"Endless talk talk" is something that nature is incapable of and that man, learning from the explicit facts and events in process, has no need to sink into. One may be at rock bottom, in an empty house as winter comes on

> Word I was in the house alone
> Somehow must have gotten abroad,
> Word I was in my life alone,
> Word I had no one left but God. (317)

This solitude, dismal as it is, is better than the unnatural solitude which men call society, in which man can trust to "talk talk" to conceal from him that he is in his life alone, that he has no one left but God. (Is this "God" simply process? Or does it express a pious if not very determined aspiration? Passages elsewhere in Frost support either answer.)

Active opposition, active aid: these are the commonest notes in the dialogue when process is doing the talking. And let us admit that she does do most of the talking. But at least two other sorts of answer must be observed. Both are answers (I believe) that are likely to sound when a person moves away from the specific apple tree, the specific dried brook, the specific shore-line. Thus far process has always been a special event or fact that makes a special impact; there has been, if not a person-to-person relation, a direct process-to-person relation. But it is possible—Frost finds it possible—to take an inclusive view of process; then, there is no specific impact to stir the imagination keenly. Instead of asking, "What does this moment teach?" one asks—if he is following in Frost's path—"What is process in itself?"

There are two answers—at least two that recur with some frequency. One is that process—apart from the surface process-to-

person impacts already sampled—is simply drift. The other answer is that process, in addition to being the source of concrete event and fact, is the expresson of an inclusive aim or direction in which both specific event and specific man are implicated.

In "Reluctance" the generalized "drift of things" is accepted with good grace; but it is worth noting that what the poet holds before himself is not a particular event but the collective impression made by a great many events.

> Ah, when to the heart of man
> Was it ever less than a treason
> To go with the drift of things,
> To yield with a grace to reason,
> And bow and accept the end
> Of a love or a season? (43)

Whatever the particular human response, there is a definite consequence of this turn of dialogue, when drift and indifference to man are posited as lying behind the chance, momentary replies process gives. If submission, for example, were the only response man gave, we would presently feel that talk with nature is no better than talk with society—"talk talk" in the Henry Hudson phrase.

The perception that nature as process is but a Milky Way drift that flows by and over us without really touching us or meaning to touch us is one that Frost records; it is not one that he can use. Another turn which the dialogue with "collective event" manifests is just as useless to this poet: an ethical animal, an animal eager to draw upon what is outside himself for answers to his queries about *ought*—an animal, in the last analysis, more concerned with inner than with outer weather. This last turn is, we might say, the theological turn. It is the possible focus of an inclusive belief just as the mere drift of process is the possible focus of a pervasive skepticism. Earlier we perceived that Frost put questions and sought answers that were modest, that kept the dialogue to a level of concrete event and action. (The dried brook leads to no more ambitious conclusion than that we must learn to cherish the stream-bed of our life even when the waters are dried up there.) But these modest questions could not keep out the perception of drift in process. Frost, we see, always accepted the fundamental indifference of *specific* natural events to the ethical history of a

certain person. What is less tolerable is that which is suggested by a perception of general drift. This perception suggests that nature is more than just indifferent and that what we can observe in process will always be utterly irrelevant to man. We may continue to snatch at the "profit" of each chance natural event. But, if process is truly irrelevant to us, anything that we take up by chance must be regarded as something that we might as well drop at once; it will do us no good because, *ex hypothesi,* it was not "meant" to do us good.

It will do us no good—a perception of *general* drift in process will neither affirm nor deny the desire to name good and evil that stirs in us—unless we can oppose to this general and inclusive drift other perceptions, and these are perceptions that Frost is generally unwilling to follow up. For Frost has tried to be rational and at the same time to avoid being philosophical or metaphysical: a feat less easy than pragmatists and others suppose.

Frost's usual resistance to an all-inclusive—and thus metaphysical—perception of meaning in process appeared early. "A Prayer in Spring" asks: ". . . give us not to think so far away / As the uncertain harvest . . ." ; it is not our task to think of "far ends" since these—and here Frost is ironic—are "reserved for God above." (17) It is only when the dialogue that is Frost's lifelong work contains annunciations of drift that Frost makes his sort of effort to hear of "something far more deeply interfused." But the ingrained repugnance that Frost holds for this sort of discourse appears in many a poem where the poet is—in the language of "Birches"—involved in a trip clear to heaven instead of, admirably, just toward. Frost makes concessions to "thought" grudgingly. In "Bond and Free," he continues to oppose "love" (immediate, unreflective response) to "thought." Both phrases stand for ways of reaching the final point—that of a fairly full apprehension of our lot. But how much better is "love" that clings to earth than "thought" which can do no better than cleave "the interstellar gloom." The gains of thought "in heaven" are "what they are."

> Yet some Love by being thrall
> And simply staying possesses all
> In several beauty that Thought fares far
> To find fused in another star. (151)

Plainly, it is "several beauty" that Frost prefers. It would hardly be the same beauty when it is "fused in another star," when it has lost, by becoming single and metaphysical, the power to say the several things that best answer to Frost's view of the human condition.

It is, in Frost, only when the "several beauty" permits no more than a perception of confession that "thought" rather than "love" begins to stir and shape the verse. For a *general* drift is not the opposite of sheer multiplicity and sheer abundance of affirmatory or negating suggestion. Drift, as a theory about what process comes to, is not concrete; it is a metaphysical entity. It finds its opposite, properly, in another metaphysical entity, design. But design brings with it commitments that are no less distasteful to Frost than a perception of general drift: a pattern that is more than the natural and instructing world, a pattern that includes the historical and traditional world from which Frost would rather avert his gaze. So Frost's effort is usually to put general design —along with general drift—behind him; he strives to keep his dialogue pegged at the level of particular fact or event (so rich in metaphorical illumination of man's lot), and he is usually roused to amused comment when he finds that his poem has indeed slipped toward "design" or something like it. (Faced, in "Design," by a set of facts that seems to point toward arrangement rather than general drift, Frost records all there is to record, and then adds in conclusion: "If design govern in a thing so small." (396) Design governing in something larger—such as human custom or aspiration—would also arouse the protective amusement that delivers Frost from more than preliminary metaphysical grapples.

To catch nature or process out—to catch it giving signs of design instead of ample testimony to general drift—all this requires a patience that Frost dispenses with. We can demonstrate—or Frost thinks he can demonstrate—all the other suggestions that rise in the man-nature dialogue. But to entertain as more than a chance hypothesis that behind process and man is a third entity is to enter upon a vein of thought that is destructive not of the man-nature dialogue but of our reckoning of its importance. For we would have to regard this entity as the establisher of the correspondence and similarity between nature and man that the more acceptable assertion of general drift bears us away from. It is

only, one should imagine, when the implications of general drift, so destructive of the human dignity that Frost never doubts, begin to bear in too forcibly—it is only then that Frost writes a poem like "Sitting by a Bush in Broad Sunlight"; it is a poem which endorses a double creation by a third entity—God—rather than the submission of one entity, man, to another, process. Both process and man have their being from God or the sun; and the double act of creation—of man and nature—took place only once.

> God once spoke to people by name.
> The sun once imparted its flame.
> One impulse persists as our breath;
> The other persists as our faith. (342)

"Our breath" is plainly that element that comes to us from process and that binds us to process as a set of facts that have, for the time being, direction rather than drift. "Our faith" is that which binds us to what created man just as authentically as it created process.

This poem is not normative in Frost. The most that we should make of it is this: when, frightened by sheer drift, we lapse into this sort of language, we cease to be—even in Frost's sense of the words—either "environmentalist" or "sensibilist." We cease, that is, to say that man's role is simply that of learning from a process which is perfectly indifferent to whether man learns or remains in ignorance. Rather do man's way of knowing and nature's way of teaching trace their origins to a more inclusive entity (God) part of whose work must have been the establishment of a correspondence between man and nature. It is a correspondence far from clear. But, unlike the man-nature relation that Frost usually banks on, it is one in which the "lessons" man reads from nature reflect an arrangement and not, as usual in Frost, a fortuitous accident.

One may say that this whole problem is bound to arise at the end of any prolonged attempt to read process. It is a problem that informs a complex poem, "West-running Brook"—another minority report, but not an unimportant one. Here a husband and wife argue about the meaning of a stone in the stream. This stone is, for a moment, able to turn back and toward the source of the stream the water that rushes toward the sea. (The water insofar

as it falls to the sea is *drift* in our terminology.) Most of the water flows downward to the sea—

> And it is time, strength, tone, light, life and love—
> And even substance lapsing unsubstantial;
> The universal cataract of death
> That spends to nothingness—and unresisted . . . (329)

But there is a counter-movement. In point of fact, it is the rock that turns the water back, upstream. But this "sending up" is, in this poem, more than a point of fact, just as "breath" and "faith" are—in the other minority report just treated—more than points of fact. Drift gives way temporarily to design. "The cataract of death" is also the cataract of life; even when it is bent on being "unsubstantial," it displays "some strange resistance in itself"—"As if regret were in it and were sacred."

> It is this backward motion toward the source,
> Against the stream, that most we see ourselves in,
> The tribute of the current to the source.
> It is from this in nature we are from.
> It is most us. (329)

In the poem, these are the words of the husband. But they are also the words of Frost. Here the "source" is the third entity that Frost elsewhere minimizes. Why? Because a third entity transforms the dialogue between man and process; it encumbers the dialogue with a presence other than that of man himself. Man's comprehension should be enough; it should not be shadowed over by a more inclusive one: that of an intelligence or source of power that comprehends easily what man comprehends confusedly and with difficulty. To this intelligence or source of power all that nature says to man would be as much "talk talk" as the ignored utterance of the city. It would endanger a relation that has been, for this American poet, most productive.

JOHN RUSSELL'S *THE BOKE OF NURTURE*

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JOHN RUSSELL'S *The Boke of Nurture* is of the genre known as courtesy books, or courtesy literature. Courtesy books set forth those precepts pertaining to manners, behavior, and conduct that constitute the code of courtesy within a social class. Since polite behavior is continually a part of man's actions, a code of courtesy should, in theory, be broad enough to encompass man's every act; but the term *courtesy books* has been limited to apply mainly to four specific kinds of writing: directions for polite conduct, instructions to servants, parental advice to children, and instructions to princes.

The Boke of Nurture, in verse, is one of our most detailed sources of information about the duties of serving men and about the service in fifteenth-century English houses of wealth and distinction.[1] Placing his exposition within a narrative frame, Russell deals with the activities of the panter, butler, carver, sewer, chamberlain, usher, and marshal.

Because the connotations of the names of these servants have changed through the centuries, it is well to define the words in terms of medieval concepts. In medieval houses the panter was the servant who supplied the bread and who had charge of the pantry, but his duties merged with those of the butler. In charge of the great hall, the butler superintended the service of the table. The carver's chief duty was to carve and serve the meats; and the sewer (pronounced *soo-er*) corresponded to the modern waiter, who hands and serves the dishes. Carrying out the personal duties of the modern valet to his master, the chamberlain also directed the management of his lord's bedchamber. The door of the great hall was kept by the usher, who admitted guests and introduced strangers; and the marshal was the major domo of his lord's house.

[1] See my article "The Boke of Keruynge," *Bucknell University Studies,* III (Dec., 1951), 23-34, for a discussion of a prose work that through long passages parallels Russell's poem but presents a more modest household.

His position was above that of ordinary servants, for it carried great responsibility and authority and it required intelligence and administrative ability.

Although Russell's treatise deals principally with the duties and conduct of these household officials, it also describes the courses of great state dinners and outlines the order of precedence of both clerical and lay guests from the pope down to the groom, thereby settling vexing questions of protocol. In addition, it introduces basic rules of etiquette for gentlefolk as well as for serving men; and it includes considerable information as to the preparation and serving of a number of specific dishes.

The Boke of Nurture, the only work associated with John Russell's name, is preserved in five manuscripts:[2]

1. MS Harley 4011, ff. 171-189 (1250 lines), British Museum.
2. MS Old Royal 17.D.xv, ff. 333-348 (884 lines, omitting first stanza and breaking off incomplete), British Museum.
3. MS Sloane 1315, ff. 1-15b (864 lines, omitting first stanza and final sections dealing with the usher and the marshal and the conclusion), British Museum.
4. MS Sloane 2027, ff. 37-52b (943 lines, omitting conclusion), British Museum.
5. MS Chetham 8009, ff. 333-352b (955 lines), Chetham Library, Manchester, England.

These manuscripts comprise five different versions of the work, but relations between them are readily established upon a comparison of their contents and of their language. No two versions are identical, and no one version is a copy of another. The versions in MSS Sloane 2027 and Chetham 8009 are probably the earliest. They closely parallel each other and are most likely from one manuscript source; while the versions in MSS Sloane 1315 and Old Royal 17.D.xv are probably from another manuscript source. These four versions are all more closely related to each other than they are to the version in the Harleian manuscript. The version in MS Harley 4011, the fullest and the most artistically finished, is from still a third manuscript tradition and is most likely of a somewhat later date of composition than the other four versions.

[2] Carleton Brown and Rossell Hope Robbins, *The Index to Middle English Verse,* New York (The Bibliographical Society), 1943, No. 1514.

Thus, it is possible that these represent various stages of the author's work in revising and rewriting.

The manuscripts from which these five copies were made have been lost, and the work that Russell claims to have used as his model likewise has been lost. The five extant manuscripts were made by scribes, Russell's autograph copy having disappeared.

The version of *The Boke of Nurture* in the Harleian manuscript has been edited and published by Frederick J. Furnivall for the Early English Text Society.[3] Furnivall knew of the versions in the two Sloane manuscripts; but he did not make a close comparative study of the three manuscripts, for he contemplated issuing separate editions of the three versions. His selection of the version in MS Harley 4011 for editing as the basic text, however, is entirely right. This is the fullest and the most generally reliable text of the five versions now known. Furnivall's editing represents a pioneer's work in making available to modern readers a fifteenth-century text; but his transcription is not always accurate, and his proofreading is not entirely without error. Nevertheless, for all practical purposes his edition is satisfactory. In this study, however, reference is made to microfilm copies of the five manuscripts; and all quotations are from them rather than from Mr. Furnivall's published edition.

The five copies of *The Boke of Nurture* differ from one another so radically that simple and meaningful collation is impossible. Not only are there variations in spelling and wording in almost every line common to two or more manuscripts, but there are also rearrangements in the order of the lines within stanzas and in the order of the stanzas themselves in some passages. Each version contains at least a few unique lines, and sometimes each pursues an independent grouping of lines into stanzas. At times meaning is altered markedly by these differences. Thus, since no orderly line-by-line collation can be made, this study undertakes to compare and contrast the contents and to examine selected passages of

[3] Frederick J. Furnivall, ed., *Early English Meals and Manners,* Early English Text Society, Original Series 32 (London, 1868), pp. 151-172. This volume has been reprinted several times under different titles, *eg., Meals and Manners of Olden Times, Manners and Meals of Olden Times,* and *The Babees Book;* but not all printings note revisions in the text and changes in the order and selections of the contents. Furnivall's title for Russell's poem, *The Boke of Nurture Folowyng Englondis gise,* is a phrase from the poem; and no manuscript contains a title for the poem.

the extant versions of *The Boke of Nurture* with the aim of understanding better than has been possible heretofore the likenesses and differences among them and of clarifying the relations of the versions to one another.

Using the version in the Harleian manuscript as basic for this paper, we shall see that the treatise is divided into sections bearing titles. A listing of the sectional titles gives a summary of the contents of the piece and serves as a working basis for comparison of the texts. The listing that follows is made up of the headings found in the manuscript (with the original spelling retained); but where no heading appears in the manuscript when a new topic is introduced, one is supplied within square brackets.

1. [Introduction], 11. 1-48
2. [Panter and Carver], 11. 49-116
3. Swete wynes, 11. 117-120
4. Ipocras, 11. 121-176
5. The botery, 11. 177-276
6. Symple condicions, 11. 277-348
7. Fumositees, 11. 349-376
8. Keruyng of fflesh, 11. 377-476
9. Bake metes, 11. 477-500
10. Fried metes, 11. 501-516
11. Potages, 11. 517-528
12. Diuerce sawces, 11. 529-545
13. Keruyng of ffisch, 11. 546-657
14. Office of a sewer, 11. 658-685
15. A dynere of fflesche, 11. 686-718
    a. The ffurst course, 11. 686-692
    b. The second course, 11. 693-704
    c. The .iijd. course, 11. 705-718
16. A dinere of ffische, 11. 719-768
    a. The furst course, 11. 719-730
    b. The seconde course, 11. 731-743
    c. The thrid course, 11. 744-756
    d. The .iiij. course of frute, 11. 757-768
17. The supscripcion of the[4] subtiltees aboue specified, here foloweth, 11. 769-794

[4] The characters *thorn* and *yogh* in the manuscripts are printed here as *th* and *s*.

18. A fest for a franklen, 11. 795-818
19. Sewes on fisch*e* dayes, 11. 819-830
20. Sawce for fisch*e*, 11. 831-862
21. The office off a chamburlayne, 11. 863-938
22. The warderobes, 11. 939-974
23. A bath or stewe so called, 11. 975-990
24. The makyng of a bath*e* medicinable, 11. 991-1000
25. The office of vssher & m*ar*challe, 11. 1001-1172
26. [Conclusion], 11. 1173-1234
27. [*Envoy*], 11. 1235-1250

Russell begins *The Boke of Nurture* in the manner of the medieval romance. The narrator awakes on a May morning and arises to walk in a forest. After obtaining the consent of the forester, he enters the wood and soon meets a downcast youth hunting deer. A word is sufficient to turn the young man from his hunting to join the narrator. When asked whom he serves, the youth replies that he serves no man because he is ignorant as a popinjay and no one will hire him. The narrator asks what household office he would like to fill, for he wishes to teach him. Eagerly the young man declares that he would like to learn the duties of the panter, butler, chamberlain, and carver. Thereupon, the narrator begins his exposition of these offices, adding the sewer, usher, and marshal. Occasionally he addresses his friend as "my good son," and several times the young man asks questions and makes comments. In a conventional conclusion, after the youth thanks the narrator for his instruction, the narrator begs that the young man and the readers pray for his soul, for the soul of his patron, and for the souls of his mother and father. In an *envoy* addressed to the reader, the poet excuses himself from error and crudeness in writing. He explains that neither he nor his "forewriter" is to be blamed, for each worked from a source rather than indulged in original composition. Hence, blame for faults of any kind rests upon the earlier writer.

The narrative frame appears in its complete form only in the Harleian manuscript. The version in the Chetham manuscript is not quite so full, and that in MS Sloane 1315 is greatly abbreviated. Both the versions in MSS Sloane 2027 and Old Royal 17.D.xv provide the introductory setting but lack the conclusion.

The former closes abruptly after the discussion of the duties of the usher and the marshal while the latter manuscript is mutilated and the last few pages are missing.

Russell tells us that he has served both as usher and as marshal to "a prince of high degree," and his instructions accurately reflect intimate knowledge of the management of a prince's house. He later tells us that the prince was Humphrey, Duke of Gloucester, who was the younger son of Henry IV and a brother of Henry V. Russell names himself only in the versions in the Harleian and the Chetham manuscripts, and he names the Duke of Gloucester only in the Harleian manuscript. The Chetham manuscript adds the note that the author is now dwelling in London. These, then, are the biographical facts that we have about the writer. There is no legitimate reason for doubting them, and their acceptance has been traditional for so long that the *Dictionary of National Biography* contains a sketch of respectable length based entirely upon what Russell says about himself in this piece.

John Russell also tells us that old age has overtaken him and that he must leave the prince's service. He does not, however, make it clear whether he has already left his service or is about to leave it; but neither does he speak as if the prince were dead. Thus, it may be assumed that *The Boke of Nurture* was probably written by Russell shortly before the Duke of Gloucester met his death in 1446, for linguistic and other evidence in the poem does not conflict with this date.

The five versions of *The Boke of Nurture* generally parallel one another as to topics and the order in which they are taken up, but there are exceptions. For example, in the Harleian manuscript following the narrative introduction the poet begins the exposition with a discussion of the duties of the panter because the youth has just requested that these be explained. In the other four manuscripts, however, in spite of the youth's request the narrator devotes sixteen or eighteen lines to general elementary rules of etiquette. This passage is largely repeated later in the section entitled "Symple condicions," and the Harleian manuscript's omission of the first passage merely precludes unnecessary repetition.

Another passage showing differences in the order of topics includes the sections pertaining to the carver and the sewer, cover-

ing lines 546-862 in the Harleian manuscript. Here the topics follow this order:

The Carving of Fish
The Sewer
Feasts of Flesh and of Fish
Subtleties
A Feast for a Franklin
Sewes for Fish Days
Sauces for Fish

The versions in MSS Old Royal 17.D.xv, Sloane 1315, and Sloane 2027 all adopt a somewhat more logical and better-unified order:

The Carving of Fish
Sewes for Fish Days
Sauces for Fish
The Sewer
Feasts of Flesh and of Fish
A Feast for a Franklin

The Chetham manuscript follows this order too, but it omits the section "Sewes for Fish Days." (Sewes are pottages or broths.) All four of these manuscripts omit the section describing the subtleties treated in MS Harley 4011, 11. 769-794. Thus, they achieve better unity and coherence by considering three aspects of the preparation and serving of fish in three successive sections and by following the duties of the sewer with three sections dealing with feasts that the sewer supervises. The differences in the order of treating these topics constitute one of the characteristics that set off four of the manuscripts as being more closely related to one another than they are to the fifth, the Harleian manuscript. These differences also provide a strong argument for the theory that these four manuscripts are drawn from one manuscript source while the Harleian is drawn from another.

The three feasts that are described show another kind of variation among the five versions of *The Boke of Nurture*. The descriptions of the feasts in the Harleian manuscript are the long-

est and the most elaborate, and they suggest lavish state dinners such as Russell saw in the Duke of Gloucester's princely house. The feast of flesh and the feast of fish are divided into courses, the former including three and the latter four. Without examining the details of the courses, we see in the elaborate nature of the subtleties concluding the courses the magnificence of the dinners of state. A subtlety, it should be explained, is a decorative and picturesque composition of sweets and jellies made in a highly fanciful and imaginative form.

In the Harleian manuscript the first course of the feast of flesh ends with a subtlety representing the angel Gabriel greeting the Virgin with an "Ave," while the second concludes with one representing an angel appearing and singing to three shepherds upon a hill. The first course of the feast of fish is finished with a subtlety representing a gallant young man standing upon a cloud, piping and singing, "louing & lyght." He symbolizes springtime and youth. The second course concludes with a subtlety presenting a rough, red, angry man of war, who symbolizes summer and maturity. The third course ends with a subtlety showing a man with a sickle in his hand, standing in a river of water and "wrapped in wed*is* in werysome wyse / hauyng*e* no deyneith to daunce." He stands for the fall of the year and approaching age. The last course ends with a subtlety presenting an old man with white locks, sitting on a stone and looking "Nigard in hart & hevy of chere." He is the symbol of winter and of old age. Russell continues with further details about the four subtleties, giving Latin inscriptions to accompany them; and he closes the section with the remark that when these are shown with other novelties at a royal feast of great solemnity they will provide much pleasure. And he slyly adds that they are also "A notable cost to the ordynaunce" of the house.

The other four versions of *The Boke of Nurture* treat these feasts more briefly, and they reduce the subtleties to humor and satire. The version of the feast of flesh in MS Old Royal 17.D.xv presents a subtlety of Our Lady's tongue after the first course and one of "our dames tonge hath the palsy" after the second. MS Sloane 2027 changes the possessives and produces satirical subtleties representing *your* dame's tongue and *your* dame's tongue with the palsy, respectively. The Chetham manuscript carelessly

repeats "the tongue of your dame," and MS Sloane 1315 fails to mention the first subtlety and records the second as "owre dames tonge hath the palsy."

In the feast of fish, MS Royal presents the following subtleties: A woman dancing on the ground, a woman merrily laughing in a chair, and a goodly woman. No subtlety follows the fourth course. MSS Sloane 2027 and Chetham 8009 present the same subtleties; but MS Sloane 1315 is so careless in its condensation of the passage that while the three representations are mentioned, they are not specified as being subtleties.

The subtleties presented in the four similar versions strike us today as being so imaginative and so ingenious as to arouse great admiration and pleasure among the guests, but they are simple and commonplace in comparison with those described in the Harleian manuscript. The differences between the two sets of subtleties may be accounted for by the suggestion that the description in the Harleian manuscript was prepared for a household comparable to that of the prince in whose service Russell had gained knowledge and experience, but the less elaborate descriptions in the other versions were prepared with somewhat less grand houses in mind.

The two sets of subtleties also constitute another characteristic that places the version in the Harleian manuscript in a tradition apart from that of the other four versions.

The description of the feast for a franklin[5] immediately reminds us of the best known of all franklins, whom Chaucer described as being "Epicurus owene sone" and of whom he says that "It snewed in his hous of mete and drynke" (Prologue, *Canterbury Tales,* 11. 336-345). The version of *The Boke of Nurture* in the Harleian manuscript states that a franklin may make a feast by serving a dinner in three courses. In the first course are brawn (specifically, flesh of the boar or of swine) with mustard, bacon with peas, stewed beef or mutton, boiled chicken or capon, roasted goose and pig, baked meat, and custard (not the modern sweet custard but a kind of open pie containing pieces of meat in a broth or with milk thickened with eggs and sweetened and seasoned with spices). The second course includes mortress (a kind of soup or pottage made of either bread and milk or of various kinds of

[5] A franklin is a landowner of free but not noble birth who ranked next below the gentry.

meat) or jussel (a general term that includes various forms of mince or of mixed stews); veal, lamb, kid, or rabbit; roasted chicken or pigeon; baked meats, doucets (testicles of deer, considered a delicacy), fritters, and leach (a dish consisting of sliced meat, eggs, fruit, and spices in jelly). The third course, which may be considered more or less equivalent to dessert, consists of spiced apples and pears, bread and cheese, spiced cakes and wafers, and bragget (a drink of honey and ale fermented together) and mead (a drink of honey and water fermented together).

Although the divisions between the courses are not distinct in the Harleian manuscript, reference to the other manuscripts makes the divisions clear. While the feast for a franklin lacks the subtleties of the state dinners, it is a meal of sufficient variety and abundance to substantiate Chaucer's remarks about the reputation for hospitality that franklins in general enjoyed.

Just as there are great differences in the treatment of subject matter in the five versions of *The Boke of Nurture* so are there great differences in versification and language. Basically and generally the version in MS Harley 4011 is in stanzas of four long lines employing a single rhyme. The normal line consists of seven iambic feet, but there is much freedom and roughness in both the poetic foot and the length of the line. The passages concerning the three feasts and the four subtleties of the seasons discussed above are in long stanzas of complicated rhyme scheme and in short lines usually of three feet. The other versions of *The Boke of Nurture* maintain, throughout, the pattern of four-line stanzas with a single rhyme, but the meter is far from regular. The version in the Old Royal manuscript uses short lines generally of five iambic feet, and that in MS Sloane 1315 retains the four rhyming lines without indicating stanzas. The version in the Harleian manuscript contains much rough and uneven versification, but the other versions are no more artistic. The use of tags to provide rhymes and of fillers to make out the metrical line causes all the versions to be wordy and repetitious. Altogether, the versification is such that one can readily appreciate Russell's plea in the *envoy* for excuse from blame, for this is obviously the verse of an amateur.

In spite of interesting aspects of language in *The Boke of Nurture,* the work was written so late that it contains no conclusive

evidence of Russell's native regional dialect. The five manuscripts were all written around the time that William Caxton set up his printing press in Westminster in 1476, and it is well known that the press soon wiped out regional dialects in written English and established standard written language. Thus, a study of the language in the manuscripts of *The Boke of Nurture* contributes nothing pointing to the poet's native dialect.

No fully satisfactory comparison of the five versions of *The Boke of Nurture* can be made without reproducing in their entirety the five manuscript copies. This, however, is impractical and probably unnecessary. It would scarcely serve a really useful purpose, for Furnivall's edition of the Harleian version is reliable except in comparatively unimportant details. Nevertheless, the quoting of a single stanza from the five manuscripts will permit the reader to see for himself how closely they parallel one another in meaning but how widely they diverge in expression. The stanza selected and quoted below is chosen almost at random, for it is intended to be representative and not a stanza that contains puzzles or problems or exceptional characteristics.

MS Harley 4011, 11. 77-80:

Serve fastyng*e* / plommys / damson / cheries / and grapis to plese
aft*ur* mete / peer*es* nottys / strawberies wyneberies and hardchese
also blawnderell*es* pepyns / careawey in comfyte / Compost*is* ar like to these
aftur sopper rosted apples par*is* blaunche powd*er* y*our* stomak for to ese[6]

MS Sloane 2027, 11. 93-96:

Serue butt*er* ffastyng & . plomys damsyns chyryes grapys y*our* mayst*er* to ples
After mete . perys . notys . strawberyys hurtlberyes . & . hard chese
Also blaundrell*is* pyppyns . with caraway yn comfyt*is* his stomake [*sic*]
Afftyr soper rostyd applys & . perys w*ith* blaunch powd*er* or hard chese

MS Chetham 8009, 11. 94-98:

Serue ffastyng butt*er* plumbis damysons chereis
Grapis youre master to please
After mete peris nott*is* strawberis hurtilberes & hard ches
Also blaunderell*is* pipyns w*ith* care Awey *in* comfet his stomake to ease
After soper rostid aplis peris blaunchyd powdyr w*ith* hard ches

[6] Literal modernization of this stanza reads:
Serve in periods of fasting plums, damsons, cherries, and grapes to please;
After meat, pears, nuts, strawberries, wineberries, and hard cheese;
Also blaunrells, pippins, caraway seed in comfits, compotes are likely to please;
After supper roasted apples, pears, blanched powder your stomach to ease.

MS Old Royal 17.D.xv, 11. 89-92:

Butt*er* plomes damecens chere grapes s*er*ue fastynge to ete
peres nottes straberes hurtilberes hard chese aft*er* mete
blanderels pepyns wit*h* careaway in comfete
after soppere roste apples peres wit*h* blaunch poud*er* & hard chese sete

MS Sloane 1315, 11. 89-92:

Butter plomes damesons cherys grapes s*er*ue fastynge to ete
Peres nottys strawberys hurtylberys harde chese aft*er* m[ete]
Blanderell pepynys wyth caraway yn comfete
Affter sopper rostyd applys peres wit*h* blanche poud*er* and hard [cheese] set

The above excerpts speak for themselves, and a comparison of them illustrates largely much that has been said above about the relations of the five versions of John Russell's *The Boke of Nurture* to one another.